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Office Memorandum • UNITED STATES GOVERNMENT

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TO : The Files

1958

FROM :

SUBJECT: General Electric - RD-107, Task Order 5 - Trip Report

1. General - A visit was made to the Electronic Park facility of the [redacted], on 23 July 1958. This report concerns the Radio Circuit Development task under the subject contract. Present for discussions were:

2. Background - This visit was made preliminary to the delivery of a receiver and transmitter as test vehicles for the development program and the delivery of the decoder for cw selective calling system.

3. Receiver - The 3 to 30 mc (3 band) cw receiver was designed with the RR-11 specifications as a guide. Unique features include, in addition to certain solid state components, complete transistorization (11 transistors) continuous tracking, AGC, AFC and double conversion. The complete receiver is hardly larger than a king size pack of cigarettes. It is packaged, however, in a case the approximate size of the RR-11. Thus, a large area was available for batteries.

4. Receiver Battery Performance - The company reported that the receiver, when wide open and in the absence of a signal, draws 350 microamperes and during normal reception draws 5 milliamperes. The batteries selected for 6 volt operation are 5 sealed nickel cadmium cells manufactured by [redacted]. These cells have a capacity of 800 milliamperere hours. [redacted] advised that the receiver had been operating at rated output in a cold box at minus 40 F. for 100 hours, and removed and operated an additional 250 hours without any indicated need for recharging the batteries. The company feels that these cells will have a life of 500 hours before recharging becomes necessary. This is a most excellent report on the [redacted] cells, especially the performance at -40. The company could not say what the actual voltage at -40 was nor could they estimate the actual cell capacity at -40°C. Our lab, which is undertaking extensive tests of the [redacted] cells, has indicated that the .8 ampere cell meets the manufacturer's specifications.

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In an earlier visit to [redacted], that company would make no statement regarding performance below -20 F. but would guarantee performance down to that temperature. [redacted] as conservative. Just so everything isn't all "peachy" [redacted] advised that cell leakage is indicated by the accumulation of salt particles about the seal. This is not believed serious, although [redacted] plans to pot the cells because of this (RS-19).

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5. Transmitter Delivery - The 3 to 30 megacycle transmitter as a test vehicle for prior component and circuit development studies was ready for delivery. This unit will be available for Headquarters inspection early next week, and prior to being sent to the laboratory for evaluation.

6. Receiver Delivery - [redacted] advised that spurious responses were evident in the receiver on Tuesday, the day before our visit, and that his people worked until 4 A.M. in an effort to remove such responses without success. It is felt that [redacted] has made comprehensive tests of individual components and circuits, but that tests of the receiver as a system have been only of a preliminary nature. [redacted] would like to deliver this unit now as the task order expires 1 August 1958. Remaining work includes the preparation of a final report. [redacted] asked for a few more days to work on the spurious response problem and said he would deliver the receiver to us next week.

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7. Laboratory Evaluation - [redacted] remained in [redacted] to spend another full day with the [redacted] engineers in order to gain sufficient technical detail for a comprehensive laboratory evaluation of the test vehicles due to the absence of written technical data. (Complete data will be in the company's final report which will be delayed 30 to 60 days).

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8. Headquarters Inspection - The transmitter and receiver test vehicles, and the selective call decoder, will be available for Headquarters inspection next week, after which they will be sent to the laboratory for evaluation.

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